

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference SNDN.P002WO	<b>FOR FURTHER ACTION</b>	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/US04/01553	International filing date ( <i>day/month/year</i> ) 15 January 2004 (15.01.2004)	(Earliest) Priority Date ( <i>day/month/year</i> ) 15 January 2003 (15.01.2003)
Applicant SENDYNE CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the Report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

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the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐

contained in the international application in written form.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority in written form.

☐

furnished subsequently to this Authority in computer readable form.

☐

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (See Box II).

4. With regard to the **title**,

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the text is approved as submitted by the applicant.

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the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☐

the text is approved as submitted by the applicant.

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the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 3

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as suggested by the applicant.

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None of the figures

☐

because the applicant failed to suggest a figure.

☐

because this figure better characterizes the invention.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01553

## Box III TEXT OF THE ABSTRACT (Continuation of Item 5 of the first sheet)

The technical features mentioned in the abstract do not include a reference sign between parentheses (PCT Rule 8.1(d)).

### NEW ABSTRACT

In a direct methanol fuel cell, fuel efficiency is maintained by periodically adding a higher methanol concentration mixture through a cartridge (3) into the primary fuel container (1). The cartridge (3) replenishes methanol and partial water losses due to the consumption of fuel in the power generating process. In a typical system, the fuel replenishment mechanism is controlled through an electronic apparatus that monitors the power conversion process and is capable of predicting remaining operating capacity.

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/01553

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01M 8/02,8/04, 8/10, 4/86

US CL : 429/38, 32, 34, 39, 44, 22, 38, 42, 40, 46

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 429/38, 32, 34, 39, 44, 22, 38, 42, 40, 46

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y, E	US 6,696,189 B2 (BOSTAPH et al) 24 February 2004, col. 3, lines 20-67 and col. 4, lines 1-16	11-15
Y, P	US 6,630,266 B2 (HOCKADAY et al) 07 October 2003, col. 2, lines 35-67 and col. 3, lines 1-11	1-15

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 26 July 2004 (26.07.2004)	Date of mailing of the international search report 08 NOV 2004
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Angela J. Martin Telephone No. 866-217-9197

# INTERNATIONAL SEARCH REPORT

PCT/US04/01553

## Continuation of B. FIELDS SEARCHED Item 3:

EAST

search terms: direct methanol fuel cell, methanol concentrations, cartridge